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PURPOSE

The development of these guidelines were initiated to establish accurate and consistent monitoring report guidelines for the South Florida Water Management District and to provide a standardized report format for the public. Specifically, the report guidelines provide:

- Standardized format which will allow for consistency in reviewing data
- Simplified entry of data into the District's post-permit compliance database
- Useful and consistent information that can be used in determining compliance status and overall success of mitigation projects

Additional enhancements will be added in the future that will provide efficient processing of monitoring reports. One of these enhancements will include the electronic submittal of monitoring reports by permittees.

TYPICAL COVER PAGE

Environmental Monitoring Report

Project name

Permit Number

County, Section, Township & Range

Permittee

Report Number

Date Submitted

Consultant

Consultant Telephone Number

INTRODUCTION

Project Objective (including pertinent environmental special conditions):

Permit Number, Application Number and Issue Date:

Project Construction Schedule:

Monitoring Report Schedule:

SITE LOCATION AND DESCRIPTION

Figure 1. Site Location Map

Map showing specific location and location in relation to regional features (i.e. roads, canals, etc.)

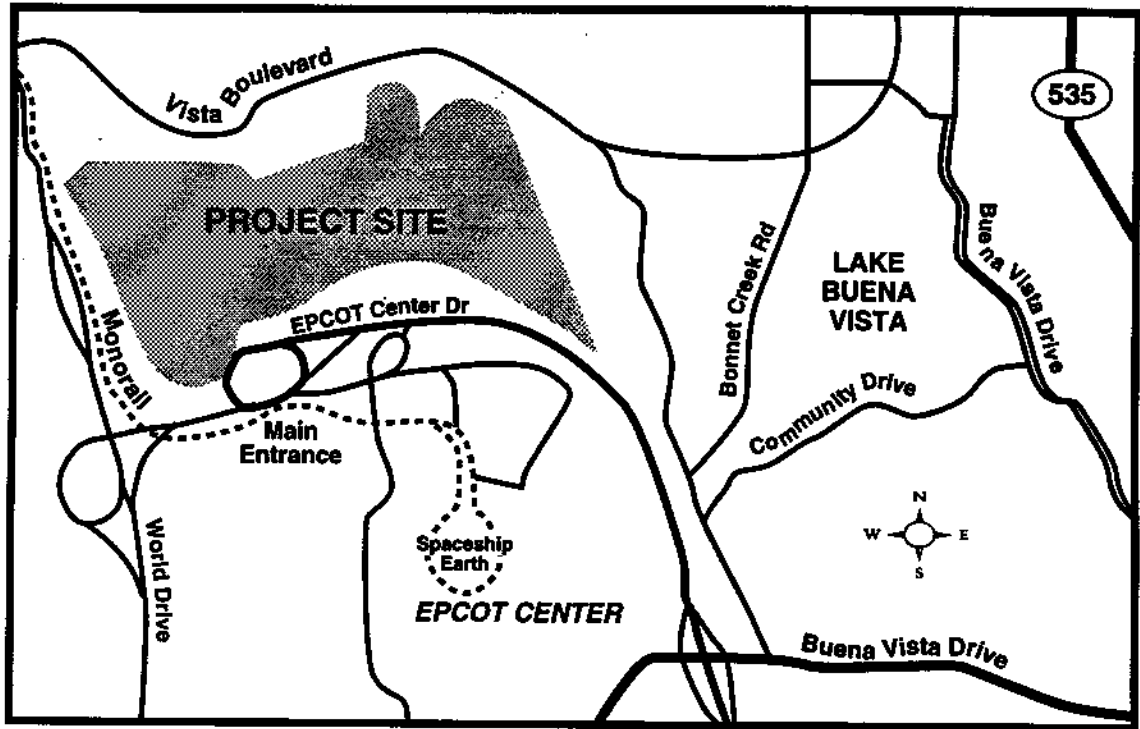
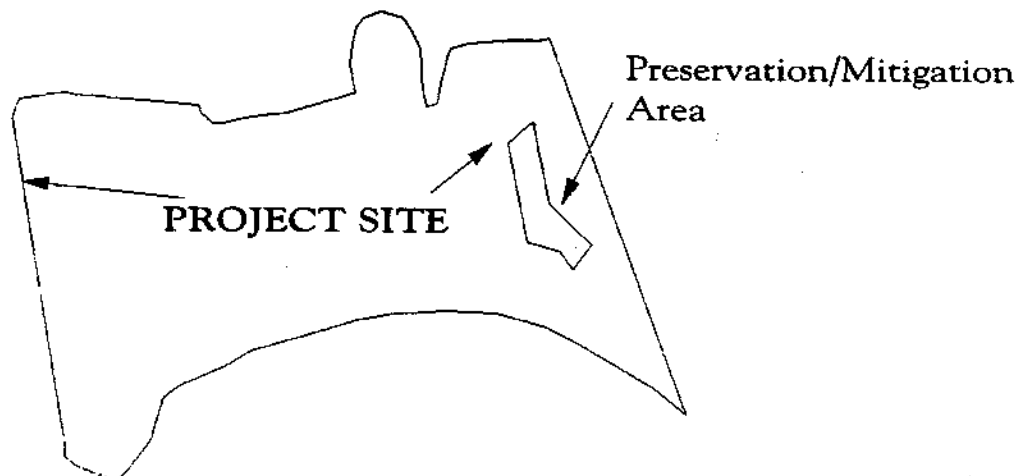


Figure 2. Detailed Site Map

Map showing location of wetland within project.



FIELD SAMPLING DESIGN

Figure 3. Typical Wetland Area Monitoring Layout (Example shows agriculture application.)

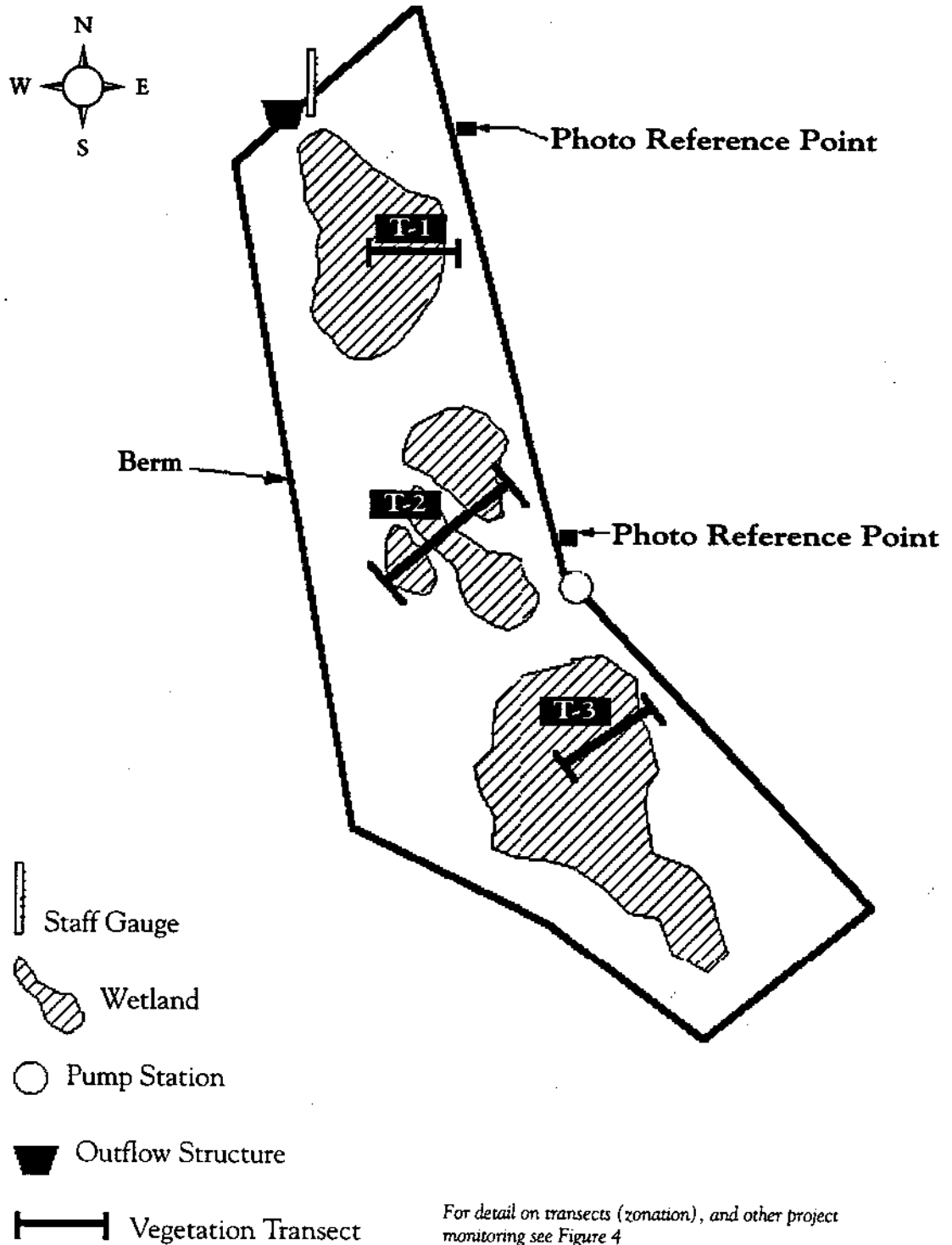


Figure 4. Wetland Plan View showing location of transect through wetland areas to be monitored. (Location of rain gauge, and staff gauge(s) should be provided with each report, where applicable):

Note: For an example of a cross-sectional view see Figure 5

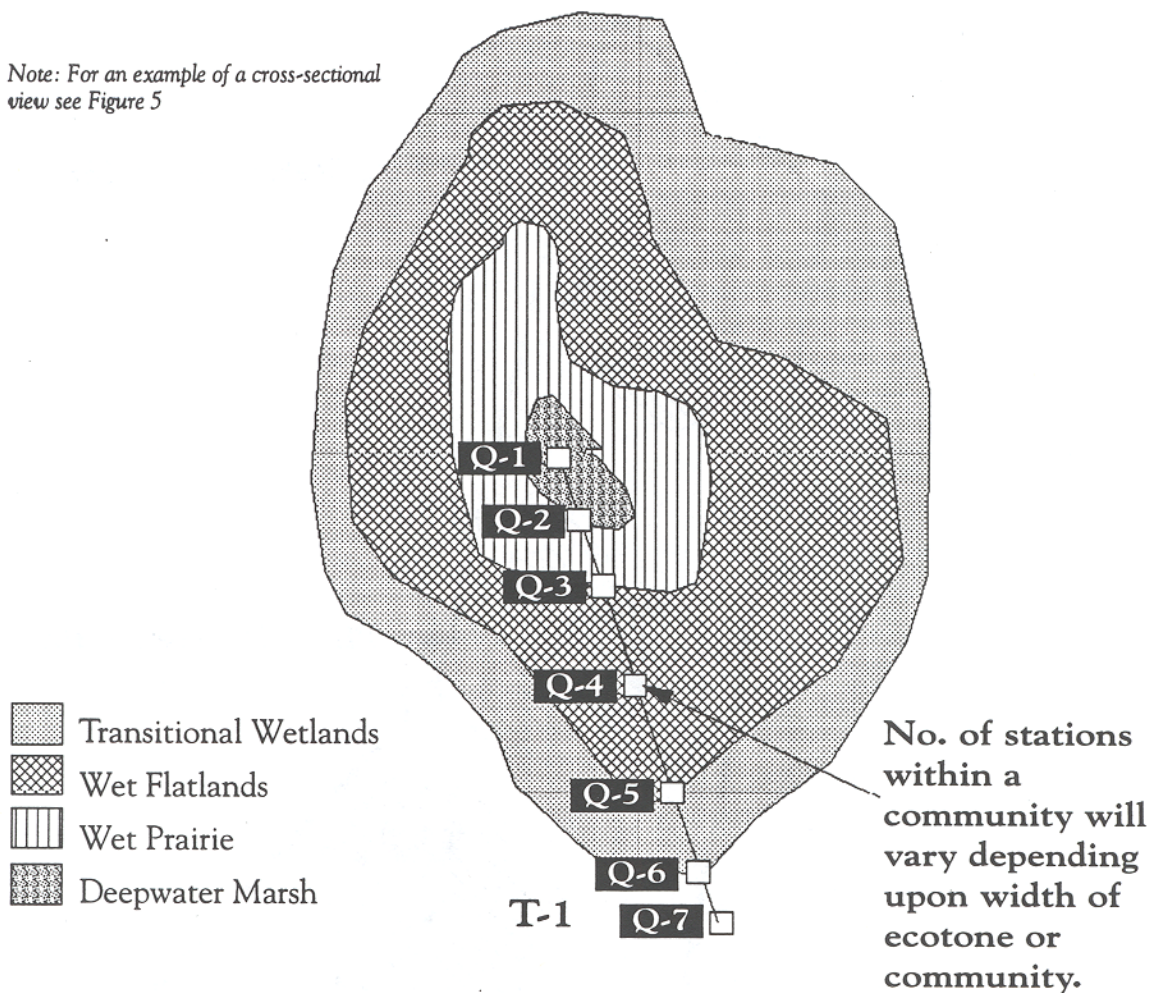
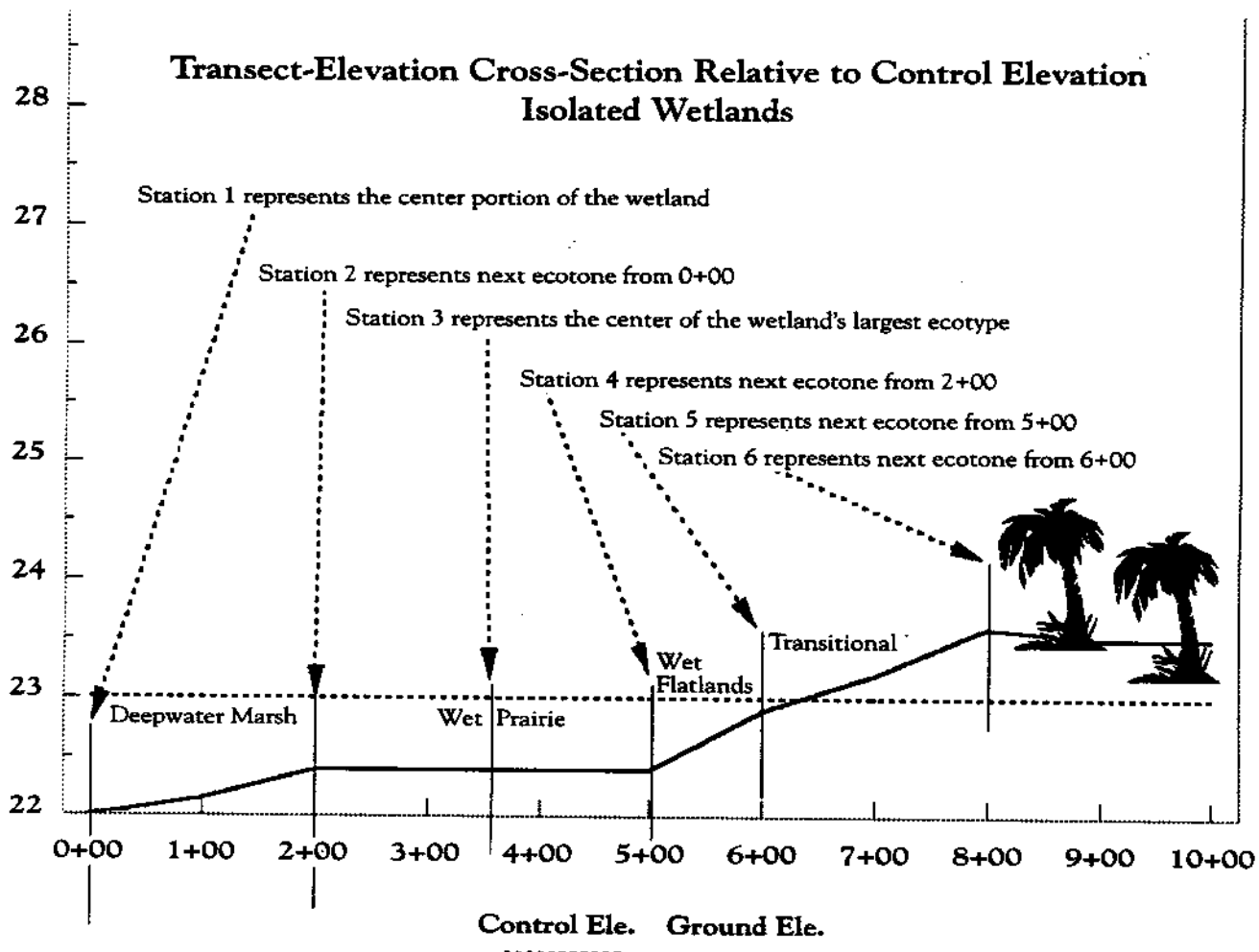


Table applies for each wetland and quadrat to be monitored.

Wetland "X"	Baseline	1st Annual	2nd Annual	3rd Annual	4th Annual	5th Annual
COVERAGE						
T1-Q1						
Spp.1	%	%	%	%	%	%
Spp.2	%	%	%	%	%	%
Spp.3	%	%	%	%	%	%
Spp.4 (etc.)	%	%	%	%	%	%
T1-Q2 (etc.)						

Comments for Wetland "X": Comments should reflect overall condition of the wetland for each reporting period.

Figure 5. Transect-Elevation Cross-Section Relative to Control Elevation of Wetlands



SAMPLING METHODOLOGY

Each quadrat along the transect should be sized based on the type of community encountered within that ecotone. For example, a quadrat for a mature hardwood swamp should be considerably larger than a wet prairie. Size, location and number of quadrats should remain consistent through all monitoring reports.

Plant species should be categorized by:

- *Dominant Species - Composition of 80% or greater
- *Other Species - <20% Coverage
- *Significant Indicator Species - Individuals or %

Additional Guidelines:

- Transect Stations should be set up from 0+00 to infinity, going from center of wetland out.
- Quadrats should be sized to accurately reflect the community type.
- Report should include survivorship data for planted tree species.
- Individual strata coverage should not exceed 100%

General Description of site condition:

- Land Use, adjacent land use, etc.

Unless specified otherwise by the permit conditions, sampling should be conducted, semiannually (April/May and Sept/October) and reports submitted annually.

Vegetation Sampling

Transect location and Length:

No. of Stations:

Percent Cover calculation methodology:

Community Types or Ecotones:

Water depth at each Station:

Detail: Each vegetative community type should be represented in transect(s). Establish one station at each interface to each ecotone. Depending on the width of the ecotone, intermediate stations may need to be established. Document natural ground elevation at each station. Vegetative species that may indicate shifts in community types (including exotic or invasive plant species) should also be noted. The same transects and stations should be used for all monitoring. Provide Common name, Genus and Species for each.

* With a breakdown of each species & % coverage

Photographic Documentation

Date stamped quality photographs should be taken at fixed stations at 90 degrees to the transect. For larger wetlands, panoramic photographs are required. Photographs should be taken during both sampling events.

Aquatic Macrofauna Sampling

Fish (summary):

Macro-invertebrates (summary):

(Include fish and macroinvertebrate tables in appendix)

Detail: Qualitative samples of small forage fishes and aquatic macroinvertebrates (if requested) should be obtained with a dip net, throw net, traps or small seine from inundated portions of the wetland at each habitat category or zone along transect (minimum 2 samples) to document the presence and relative abundance of food chain organisms. Identification to species level for macroinvertebrates and fishes. Macroinvertebrate data collected at the beginning and end of wet season and submitted with monitoring reports.

Fish and Wildlife Observations

Observation type: (i.e. observations, roosting, calls, rooting, rubs, scats & tracks). Observation should be site specific. Utilization of the area by wading birds and other organisms higher in the food chain.

Detail: Provide table in appendix by Common Name, Genus and Species.

Hydrology

Source: (i.e. Rainfall, Surface Water, Pump System, Groundwater)

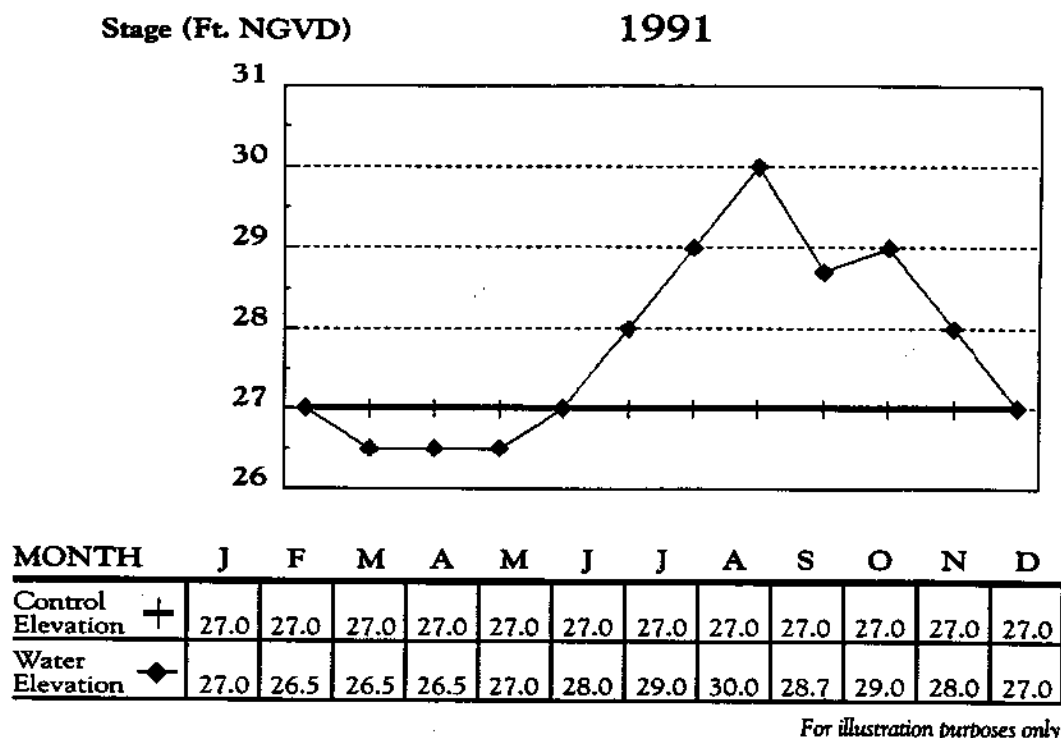
Total Monthly Rainfall: Rain Gauges should be located on project site or close proximity to site and recorded on a weekly basis (minimum)

Staff Gauge(s) should be located near the water control structure and set to NGVD (at base of staff gauge - Weekly readings)

Hydrographs: See figure 6 (only associated with those projects with control elevations)

Detail: Rainfall should be recorded on a weekly basis with the total monthly provided in the report.

Figure 6. Annual Stage/Rainfall Hydrograph



Results and Discussion

The results and discussion section should provide a summary of the overall data (i.e. Vegetation, Aquatic Macrofauna, Wildlife and Hydrology, if applicable). Summary should indicate vegetative coverage % of species across entire transect(s). If applicable, survivorship data should be submitted for planted tree species. Summary may also be broken down into the community types or ecotones. Provide an overall summary of site conditions.

Project Maintenance: Wetland maintenance methodology should be submitted with the baseline report* or with the time-zero report upon completion of the mitigation objective (creation, restoration, enhancement or preservation). The plan should address removal of exotic and nuisance plant species (total eradication of exotic plant species and minimum of 10% of all nuisance plant species) and assure an 80% coverage or appropriate survival rate for planted or recruited species. An evaluation of the success of the maintenance effort must be conducted and discussed in the monitoring report. Report should discuss any remediation efforts implemented to bring the project into compliance.

* Baseline Report - Monitoring conducted prior to construction

Time Zero Report - Monitoring conducted after completion of initial mitigation planting

Appendix 1. Water Level Reading Table (NGVD)

Weekly Water Level Data (Example)

1994 Wetland1-Staff Gauge 1

June 7	25.36
June 14	25.82
June 21	25.91
June 28	28.89

Wetland1-Staff Gauge 1

July 5	27.05
July 12	26.36
July 19	27.15
July 26	27.06

Wetland1-Staff Gauge 1

Aug 2	27.00
Aug 9	28.85
Aug 16	28.80
Aug 23	28.20
Aug 30	28.15

Appendix 2. Example of Photo Station

Photo date and time:

Transect or Photo point ID:

Direction:

